REMARKS

This is a Response to the Office Action mailed November 7, 2006, in which a three (3) month Shortened Statutory Period for Response was set, and which expired February 7, 2007. Attached is an electronic fee transmittal with the requisite fee to cover the fee for a one-month extension of time, to March 7, 2007. Twenty (20) claims, including three (3) independent claims, were paid for in the application. Claims 1-8 were canceled by the Applicants in their August 25, 2006, response to the Office Action of May 25, 2006. No new matter has been added to the application. Claims 9-28 remain pending. The Director is authorized to charge any additional fees due by way of this Response, or credit any overpayment, to our Deposit Account No. 19-1090.

1. Rejections Under 35 U.S.C. § 103(a)

In the Office Action, beginning at page 2, claims 9-28 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Hideki et al.* (JP 2001-243655), hereinafter *Hideki*, in view of *Yoshinari et al.* (U.S. Patent 6,333,913), hereinafter *Yoshinari*. It is well-established at law that, for a proper rejection of a claim under 35 U.S.C. § 103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly or explicitly, all elements and/or features of the claim at issue. See, *e.g.*, *In Re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

a. Independent Claims 9, 17, and 18

Independent claim 9 is allowable for at least the reason that the proposed combination of *Hideki* in view of *Yoshinari* does not disclose, teach, or suggest at least the feature of "forming a recording mark in the at least one information recording layer ... wherein the power of the laser beam is modulated so that a time period during which the power of the laser beam is set to the *bottom power for forming the end portion of each of the recording marks becomes longer as a linear recording velocity is higher*," as recited in claim 9 (emphasis added). Independent claim 17 is allowable for at least the reason that the proposed combination of *Hideki*

in view of *Yoshinari* does not disclose, teach, or suggest at least the feature of "apparatus for recording data in an optical recording medium ... wherein the power of the laser beam is modulated so that a *time period during which the power of the laser beam is set to the bottom power* for forming the end portion of each of the recording marks *becomes longer as a linear recording velocity is higher*," as recited in claim 17 (emphasis added). Independent claim 18 is allowable for at least the reason that the proposed combination of *Hideki* in view of *Yoshinari* does not disclose, teach, or suggest at least the feature of "optical recording medium ... wherein the optical recording medium is further recorded with second data for setting data recording conditions necessary for *setting the power of the laser beam to the bottom power* when it is projected onto the end portion of each of the recording marks and modulating the power of the laser beam so that *a time period during which the power of the laser beam is set to the bottom power* for forming the end portion of each of the recording marks *becomes longer as a linear recording velocity is higher*," as recited in claim 18 (emphasis added).

As noted in the Office Action at page 3, *Hideki* "does not disclose a method and apparatus for recording data on an optical recording medium, wherein the power of the laser is set to the bottom power wherein it is projected onto the end portion of each of the recording marks, and wherein the power of the laser beam is modulated so that a time period during which the power of the laser beam is set to the bottom power for forming the end marks becomes longer as linear recording velocity is higher." Thus, *Hideki* fails to disclose, teach or suggest the above-recited features of claims 9, 17, and 18.

Yoshinari also fails to disclose, teach, or suggest the above-recited features of claims 9, 17, and 18. *Yoshinari* discloses that a "*cooling pulse* may exist between the recording pulse train for forming one record mark and the subsequent recording pulse train for forming the next record mark. In other words, the power level may be controlled such that the power is reduced immediately after the recording pulse train to the erasing power Pe, and further reduced to the cooling power Pc, and then increased to the erasing power Pe. However, best results may be realized when *the cooling pulse is included immediately after the last pulse of the recording pulse train* as shown in FIG. 3. It should be noted that the *cooling power Pc* may be determined in each case by taking the composition of the recording layer, thermal structure of the medium,

linear velocity, and other conditions into consideration" (column 10, line 62, through column 11, line 8, and Figure 3, emphasis added). Even though *Yoshinari* discloses that cooling power Pc may be determined by taking the linear velocity into consideration, there is no disclosure in this portion of *Yoshinari* that the cooling power Pc becomes longer as the linear velocity increases.

Yoshinari then discloses that a "high density recording can be conducted under optimal conditions *when the product of the cooling pulse irradiation period* and *the relative velocity of the optical recording medium* to the light beam *is up to one third of the laser beam spot diameter* (distance in recording track direction of the region wherein the laser beam intensity is at least exp(-2) of the intensity at the center of the laser beam) since the deformation of the reproduced signal is minimal in such range. Signal properties will be poor when the product of the cooling pulse irradiation period and the relative velocity of the optical recording medium in relation to the light beam is in excess of one third of the laser beam spot since timing of the erasing power is retarded" (column 11, line 63, through column 12, line 8, emphasis added). Even though *Yoshinari* discloses that the product of cooling power Pc and linear velocity may be determined by taking the spot diameter into consideration, there is no disclosure in this portion of *Yoshinari* that the cooling power Pc becomes longer as the linear velocity increases.

Yoshinari finally discloses that "when the relation: $0.8T \leq Tc \leq 2.2T$ is satisfied, *a favorable jitter value is realized* and a high density recording can be conducted with the optical recording medium of various cooling rate. The Tc of less than 0.8T invites decrease in the degree of erasure and increase in the jitter, and the Tc higher than 2.2T also invites increase in the jitter" (column 12, lines 9-16, emphasis added). The relationship between total jitter and time of the cooling power Tc is illustrated in *Yoshinari* Figure 12. Even though *Yoshinari* discloses that the time of the cooling power Tc can be varied to arrive at a favorable jitter value, there is no disclosure in this portion of *Yoshinari* that the cooling power Pc becomes longer as the linear velocity increases.

For at least the reasons above, *Yoshinari* fails to disclose, teach, or suggest that the cooling power Pc becomes longer as the linear velocity increases. Therefore, *Yoshinari* cannot be used to cure the above-described deficiency in *Hideki*. Accordingly, the proposed

combination of *Hideki* in view of *Yoshinari* does not disclose at least the above-recited features of claims 9, 17, and 18. Therefore, a *prima facie* case establishing an obviousness rejection by *Hideki* in view of *Yoshinari* has not been made. Thus, claims 9, 17, and 18 are not obvious under proposed combination of *Hideki* in view of *Yoshinari* and the rejection should be withdrawn.

b. Dependent Claims

Because independent claims 9, 17 , and 18 are allowable over the cited art of record, dependent claims 10-16 (which depend from independent claim 9), dependent claims 19-23 (which depend from independent claim 17), and dependent claims 24-28 (which depend from independent claim 18) are allowable as a matter of law for at least the reason that these dependent claims contain all features/elements of their respective independent base claim. See, *e.g.*, *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Accordingly, the rejection to these claims should be withdrawn.

With respect to claims 13, 14, 22, and 23, the Office Action at page 4 alleges that *Hideki* "discloses a method and an apparatus for recording data in an optical recording medium, wherein data are recorded by employing an objective lens and a laser beam whose numerical aperture NA and wavelength .lamda. satisfy .lamda./NA .Itoreq.640 nm, and projecting the laser beam onto the optical recording medium via the objective lens (Paragraph [0045])."

However, the *machine translation* of *Hideki* discloses that "thus -- the increment mold in a reflection factor -- a blue glow wavelength region -- also setting -- high linear velocity and high-density over-writing -- it can respond -- in addition -- and high permeability required as the 1st information layer is also obtained. Although this is as a result of [of only two wavelength (660nm and 405nm)] count, the optical constant of each class is changing according to wavelength, and although especially the recording layer 7 is based also on an ingredient, 0.8 or less are the ratio to n with n of a crystal about more nearly amorphous notably [the inclination for n of a crystal to become smaller than amorphous n by the short wavelength side] than the wavelength of 500nm in many cases. Therefore, it is a case with a wavelength of 500nm or less that the increment mold in a reflection factor especially becomes advantageous rather than a reflection factor reduction mold in an optical property" (machine translation, paragraph 0045).

Hideki machine translation paragraph 0045 *makes no mention whatsoever* of a numerical aperture or that the wavelength λ satisfies $\lambda/NA \leq 640$ nm. To arrive at such a conclusion, the Office Action must improperly assume or infer other facts not actually disclosed in *Hideki*. Therefore, the rejection is not supported by the teachings of *Hideki* and a *prima facie* case establishing an obviousness rejection by *Hideki* in view of *Yoshinari* has not been made. Accordingly, the rejection to claims 13, 14, 22, and 23 should be withdrawn for at least this reason alone.

With respect to claims 24-26, the Office Action at page 5 alleges that *Hideki* "discloses an optical recording medium, which is further recorded with third data (Paragraph [0055], stated two or more pulse trains (third data)) for setting data recording conditions necessary for setting data recording conditions necessary for setting the level of the bottom power ... ."

However, the *machine translation* of *Hideki* discloses that "if the cooling section of power level P4 (however, P2>P4 >=0) is prepared immediately after two or more above-mentioned pulse trains, it is effective for being able to remove the heat of the mark back end part which is easy to become especially overheat, and preparing a mark configuration. On the contrary, in the mark front end part to which mark width of face tends to become thin that it is hard to make it amorphous, in order to arrange mark width of face with the back end, as shown in drawing 4 among said two or more pulse trains, only a top pulse can make the width of face large, or the power level can also be made higher than P1" (machine translation, paragraph 0054). Further, the *machine translation* of *Hideki* discloses that "if die length between each pulses of two or more above-mentioned pulse trains is fixed, since it can become irregular with single frequency, a modulation means can be simplified and it is advantageous" (machine translation, paragraph 0055). *Hideki* machine translation paragraphs 0054 and 0055 *make no mention whatsoever* of a "third data *for setting data recording conditions* necessary for setting the level of the bottom power," as recited in claims 24-26 (emphasis added). To arrive at such a conclusion, the Office Action must improperly assume or infer other facts not actually disclosed in *Hideki*. Therefore, the rejection is not supported by the teachings of *Hideki* and a *prima facie* case establishing an obviousness rejection by *Hideki* in view of *Yoshinari* has not been made. Accordingly, the rejection to claims 24-26 should be withdrawn for at least this reason alone.

2. Conclusion

In light of the above remarks, Applicants respectfully submit that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that all pending claims 9-28 are allowable. Applicants, therefore, respectfully request that the Examiner reconsider this application and timely allow all pending claims. The Examiner is encouraged to contact Mr. Armentrout by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. If the Examiner notes any informalities in the claims, he is further encouraged to contact Mr. Armentrout by telephone to expediently correct such informalities.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC

Raymond W. Armentrout
Registration No. 45,866

RWA:jr

701 Fifth Avenue, Suite 5400
Seattle, Washington 98104
Phone: (206) 622-4900
Fax: (206) 682-6031

890050.525USPC / 897106_1.DOC